An Assessment of Recent Market Performance of REITs in a Developing Economy

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Abstract: The study appraised the recent performance of Real Estate Investment Trust (REIT) as a new investment vehicle in Nigeria. While REITs are often presented as useful tools for diversification, little is known about the variations in the empirical correlations between the country’s REITs’ returns and the general market index. The paper addresses this issue using published data over the first four trading years (2008 – 2011) of Skye Shelter Fund, the country’s premier publicly traded REIT. Data inquiry schedules were developed to gather annual market and REIT’s return data based on the analytical framework provided by Capital Asset Pricing Model. Using regression analysis, the results of the study showed that the Nigerian REIT was weakly correlated to the broad market during the 4-year period of the analysis. The findings support the importance of REITs as a relatively low-risk, stable asset class that investors can leverage for building sustainable optimal portfolios, particularly during periods of heightened macroeconomic uncertainties of the kind witnessed during the 2008 global financial crisis. The significance of this research is the potential to chart the way forward by presenting investment opportunities in REIT for policy makers, international development institutions, financial organisations, and research centres.

Keywords: CAPM, Global Financial Crisis, Market Risk, Nigerian Economy, REITs

I. Introduction

One important fall-out of globalization is the increasing sophistication of capital markets accentuated by the introduction of new investment vehicles such as Real Estate Investment Trusts (REITs). REITs are businesses that invest, develop or operate income-producing landed properties ranging from residential houses, offices, to shopping complexes, event centres, malls, hotels, industrial buildings or warehouses, and whose shares are usually traded on stock exchanges. As a highly liquid method of investing in real estate, REITs provide returns to investors through capital appreciation from price changes and annual distributions from investment income such as rental proceeds or outright asset disposals from time to time. Since the US Congress passed the REIT Act in 1960 as a way to expand the traditional investment world beyond stocks and bonds, the investment universe of REITs has seen a phenomenal growth especially over the past twenty years. Nearly 70 percent of $1 trillion global real estate equity market capitalisation of public real estate as of mid-2012 is believed to be constituted by REITs (FTSE, 2010; Goodchild, 2008).

Consequently, there is an increasing perception of the superior value of REITs, particularly as regards providing investors the means for portfolio diversification needed to generate stable income streams from their portfolios at low risk. So far, however, there has been little discussion about the empirical nature of Nigeria’s REITs (N-REITs). The rather limited knowledge of dynamic nature of secondary property investment vehicles like REITs is believed to have contributed to the relatively low deployment of Nigeria’s real estate capital market as a tool for strengthening the country’s property finance and investment sector, and addressing the country’s perennial N$60 trillion housing finance deficit (Zyl, 2010; Moghalu, 2011).

It is against foregoing background that this study sought to appraise the recent investment performance of REITs in Nigeria. The pertinent question borders on the extent to which N-REITs are correlated with the stock market the answer to which would be helpful in determining the usefulness of the instrument in helping to diversify asset portfolio. As Lynn (2011) asks: Is real estate still a good diversifier? Using the country’s flagship REIT (Skye Shelter Fund) as a proxy, the present study was therefore designed to determine the extent to which the N-REIT’s rate of return is correlated with the broad market’s rate of return, so as to establish the true portfolio-diversification worth of the new property-backed financial instrument in Nigeria. This paper is important because current findings are expected to, among other implications, expand the literature on investment analysis and portfolio management by providing fresh insight into evolving nature of N-REITs. Results from the study may therefore be valuable for equipping asset managers, institutions and organisations,
with evidence-based insights into the emerging nature of N-REITs that could assist them to make robust investment decisions and policies in a random and uncertain business environment.

The paper is divided into five sections. The first section is this background information. In section two, relevant literatures were reviewed along with highlights of the development of REITs in Nigeria, while section three introduces the methodology of the study. Section four presents the research findings. The paper ends in section five with a summary of the study’s conclusions/implications for corporate finance theory and policy.

II. Literature Review

The case for indirect investment in real estate through REITs is perhaps well-documented in the literature (Knight Frank Residential Research, 2006; Shermma & Jeon, 2010; Souza, 2011; Oteh, 2011, Boudry, Coulson, Kellberg, & Liu, 2012; Feug, Ghosh, & Sirmons, 2013). Theoretically, REIT is a specialised property-backed business model (high-yielding, with special tax benefits) that allows investment in tangible property without actively owning (Iyiegbuniwe, 2007; ISA, 2007). REITs are typically structured to provide a similar vehicle for investment in real estate as mutual funds provide for investment in stocks. Like other corporations, REITs can be publicly (that is listed in public exchanges) or privately held (Sanya, 2011; Adetunbi, 2006).

The importance of market risk in investment analysis is also well documented in the literature. The market risk principle states that every market participant is deemed exposed to the same vagaries of the macroeconomic environment in which businesses operate, and therefore, the reward for bearing risk depends only on the systematic risk of an investment, that is, the degree to which the asset’s rate of return correlates with the market portfolio (Brealey, Myers, & Allen, 2014; Ashamu, 2009; Graham & Dodd, 2009; Blaaw, 2009). The business environment consists of a long list of such ‘uncontrollable’ factors - such several factors or conditions within (internalities) and outside (externalities) the business organization - that combine to exert pressure on a company’s capacity to fulfill its business objectives. The “market portfolio” is used to refer to all the registered securities or listed businesses on a stock exchange, and thus a robust proxy for the macroeconomic environment (Olowe, 2011). Firms or industries are believed to respond differently to market risk. In this regard, Capital Asset Pricing Model (CAPM) is probably the most apt device by which the relationship between expected return of a security and its avoidable risk can be measured relative to the market portfolio (Iyiegbuniwe, 2007). In essence, CAPM posits that the expected risk premium on each stock is proportional to its beta - one of the best known measures of how sensitive the individual security is to the market movements. In essence, the CAPM theory collapses all externalities into a well-defined factor – stock market return, denoted, $R_m$ (Brealey et al., 2014) Market return ($R_m$) is a derivate of market $PER$ (Price-Earnings ratio), the aggregate $PER$s of all listed equities on the stock exchange.

An Overview of the Nigerian Economy and Emergence of REITs

Nigeria, a middle-income, mixed economy and emerging market, with an expanding financial services industry, is Africa’s most populous nation and the leading oil and gas producer in the continent. From 2005 until 2013, driven largely by non-oil production activities including real estate, Nigeria Gross Domestic Product (GDP)($509.9 billion; 2013rebased estimate) growth rate averaged 6.8 percent reaching an all-time high of 8.6 percent in December of 2010 (The World Bank, 2014). Up from its ranking as 52nd in 2000, the country is now ranked 26th in the world in terms of GDP purchasing power parity, and now (post-rebused GDP) Africa’s biggest economy (National Bureau of Statistics [NBS], 2014). Pursuing her Vision 20: 2020 to become one of 20 largest economies in the world by 2020, Nigeria is 76 percent of ECOWAS (West African sub-regional economic bodyeconomy, 30 percent of sub-Saharan Africa, and 21 percent of Africa’s economy (Okonjo-Iweala, 2014; MINT countries, 2014; Adebowale, 2014).

Perhaps one of the reasons for including Nigeria among the MINT (Mexico, Indonesia, Nigeria, and Turkey) is the country’s humongous economic potential reflected in the significant under-representation of commercial real estate in the country’s stock market, yet the real estate sector remains a potentially key part of the economy (Baum, 2013). The country’s real estate GDP rebased value of $6.43 trillion in 2013, growing steadily from 12.2 percent in 2011 to 16.4 percent in 2013, and its present level of contribution to the country’s GDP at 8 percent, are indicative of the sector’s huge economic potentialities (NBS, 2014). Nigerian REITs (N-REITs) have only just emerged since 2008 following SEC’s regulatory framework (Investment and Securities Act [ISA], 2007) and is beginning to witness some appreciable growth in the country’s financial landscape. Partly encouraged by the Pensions Act (2004) which allows 40 percent of pension funds to be invested in REITs and mortgaged-backed securities, the country currently has three REITs with aggregate market capitalisation of US$0.5 billion ($82 billion), compared to the US REITs equity market capitalisation of $400 billion, Japan’s 35 REITs with $42 billion market capitalisation, and Singapore’s 26 REITs with $30.5 billion(Feiri, 2012). After Skye Shelter Fund was introduced as the first REIT publicly listed on the Nigerian Stock Exchange on 26th February 2008, the market received further boost with $50 billion (US$312.5 million) Union Homes Hybrid
REIT launched in September 2008, while UPDC REIT, issued for ₦30 billion (US$187.5 million) in February-March 2013, entered the market as perhaps the country’s latest publicly traded REIT (BGL Plc, 2013).

**Empirical Evidence**

While the weak correlation between large cap stocks and real estate equities has been observed in some more developed markets like the US (Appraisal Institute, 2001; Ferri, 2012), in the Nigerian context, comparable research to date (notably, Amidu, Aluko, Nulu, & Saibu, 2008; Bamiduro & Aro-Gordon, 2007; Amidu & Aluko, 2006) have been rather focused on real estate operating companies and return performance than N-REITs and their market risk behaviour, prompting the present work. This limitation from past efforts may however explained by the fact the N-REIT is a relatively new phenomenon in Nigeria. Further empirical evidence was deemed pivotal to complement earlier results that were only based on 3-year dataset (Aro-Gordon, 2013). Buttressing the relatively weak correlation of real estate asset class generally, Bello (2003) and Ojetunde (2013), among others, have shown that the Nigerian private property market is relatively slow in adjusting to the constantly changing macroeconomic events in Nigeria, but empirical awareness of the situation with publicly traded REITs remains largely sparse, leaving a knowledge gap (up-to-date empirical behaviour of the new property-backed financial instrument) which the present paper tries to fill.

**III. The Methodology and Model**

Using asset return data sourced primarily from published materials and annual reports and accounts of Sky Shelter Fund (Skyeshelt) and the Nigerian Stock Exchange (NSE), descriptive and regression analytical techniques were employed to evaluate the market performance of publicly traded REIT from 2008 to 2011. Specifically, the data sourced include the following variables: movements in the N-REIT’s market prices, subject REIT’s return ($R_i$) and market return ($R_m$). The use of published historical data for this study accords with current thinking in capital market research (Seaman Jr & Smith, 2012). The 4-year study period was justified by the need to reflect market developments following the 2008 global financial crises. Skyeshelt is Nigeria’s first and longest publicly traded equity REIT and thus adopted in this paper as a reliable proxy for the market risk was achieved following the standard statistical approach of regression analysis (Freedman, 2005). In this respect, the study was guided by the following hypothesis:

**Ho:** There is no significant correlation between N-REIT stock’s return and market portfolio return.

The Student’s t-Test statistic was deployed following the standard procedure (Moti, 2005) at t 95 percent (0.05) confidence level, based on N-1 degree of freedom. The coefficient of determination, R-squared ($R^2$), was used to indicate the ‘variability’ of the empirical dataset, or the strength of the linear relationship between N-REIT’s return and the market portfolio return. The application of $R^2$ as a simple measure of goodness of fit is justified by its apt measurement of the total variance in REIT stock’s returns that can be attributed to market movements (Brealey et al., 2014).

The $R^2$ was computed as the square of the correlation between the outcomes and the values of the single regressor, that is,

$$R^2 = 1 - \frac{SS_{res}}{SS_{tot}}$$

\[\text{... (1)}\]

Where,

$SS_{res}$ = Residual sum of squares

$SS_{tot}$ = Explained total sum of squares

The values of $R^2$ test ranges between 0 and 1; the higher the correlation between the returns being analysed, the closer the $R^2$ is to “1”.

The CAPM’s beta coefficient was used to determine whether or not there is any significant correlation between N-REIT’s return and market return during study period. Despite the model’s flaws, as observed by Fama and French (2004), among others, CAPM is widely used in the literature (Amidu et al. 2008; Ashamu, 2009; Olowe, 2011, Brealey et al., 2014) and was used in the present appraisal due to its simplicity and utility, especially given the nascent nature of N-REIT market. The CAPM collapses all externalities (such as random changes in political, economic, social, and technological environment) into a well-defined variable – market return. Beta coefficient ($\beta_i$) of N-REIT stock ($\beta_i$) is given by the formula:

$$\beta_i = \frac{\text{covariancewit hthemarket}}{\text{variancewit hthemarket}} = \frac{\sigma_{im}}{\sigma_{Rm}^2}$$

\[\text{... (2)}\]

That is,
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\[
\beta_i = \frac{1}{N-1} \sum (R_i - \bar{R}_i) (R_m - \bar{R}_M) \frac{\delta^2(\bar{R}_m)}{}
\]  

… (3)

Where,

\( R_i \) = N-REIT’s nominal rate of return of real estate stock i
\( R_m \) = Market rate of return
\( N \) = Number of observations
\( \bar{R}_i \) = Average nominal rate of return of real estate stock i
\( \bar{R}_m \) = Average market rate of return
\( \text{Cov} (R_i, R_m) \) = Covariance of return on N-REIT with the returns on a market portfolio

The market return (\( R_m \)) was determined as a derivative of market \( PER \) (Price-Earnings Ratio) over the study period, as follows:

\[
R_m = \frac{\text{Market PER}}{1}
\]  

… (4)

\( PER \) is given by the reversal of equation (3) as applicable to the N-REIT or the market portfolio.

IV. Findings and discussions

One of the most important findings to emerge from this study was that N-REIT has so far generally exhibited no significant correlation with the market portfolio, consistent with current thinking (Appraisal Institute, 2001; Sanya, 2011). Table 1 highlights the return performance of N-REIT and the market portfolio for the period 2008 – 2011. Interestingly, at a time when the broad market witnessed a general decline in 2010 with \( R_m \) at 7.02 percent, N-REIT’s rate of return (\( R_i \)) recorded a high of 12.11 percent in the same year. Table 2 suggests that the REIT asset class is a type of capital asset that has a tendency to be minimally impacted by externalities in the long-run.

Table 1: Return performance of N-REIT and the market portfolio, 2008 – 2011

<table>
<thead>
<tr>
<th>Data/Results</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>REIT’s End-December market price Naira (P)</td>
<td>111.10</td>
<td>100.00</td>
<td>97.00</td>
<td>100.00</td>
</tr>
<tr>
<td>REIT’s earnings per unit (EPU) Naira</td>
<td>5.73</td>
<td>8.73</td>
<td>11.75</td>
<td>4.48</td>
</tr>
<tr>
<td>REIT’s earnings’ yield, ( R_i ) (%)</td>
<td>5.16</td>
<td>8.73</td>
<td>12.11</td>
<td>4.48</td>
</tr>
<tr>
<td>Market Price-Earnings Ratio (( PER ))</td>
<td>15.94</td>
<td>11.46</td>
<td>14.24</td>
<td>14.32</td>
</tr>
<tr>
<td>Market Return (%) ( R_m ) on the NSE</td>
<td>6.27</td>
<td>8.73</td>
<td>7.02</td>
<td>6.98</td>
</tr>
<tr>
<td>Nigerian Treasury Bill Rate, ( R_f ) (%)</td>
<td>4.50</td>
<td>6.05</td>
<td>7.50</td>
<td>14.00</td>
</tr>
</tbody>
</table>

Sources: Authors’ research, NSE (2012),and computation results, 2013.

Figure 1 highlights the weak correlation of real estate stocks relative to the broader market: While the mainstream market curve appeared somewhat flat, the N-REIT curve appeared conical with a sharp fall to 4.48 percent yield in 2011 from its height of 12.11 percent in 2010. The result aligns with past findings on the general uncorrelated nature of real estate securities, thus revalidating the portfolio risk-diversification value of REITs (Boudry et al., 2012; Goodchild, 2008; Sanya, 2011)

Figure 1: Weak correlation: The \( R_m \) and \( R_i \) (N-REIT) curves, 2008 – 2011.

Sources: Authors’ research and computations, 2013

Table 2 highlights beta coefficient and \( R^2 \) matrix of the N-REIT over the period from 2008 to 2011. It was observed that the calculated t value of 0.5 was less than the t-table value (= 2.13) at 0.05 significance level,
while the $R^2$ value (0.122) was also far below the 0.70 threshold. In other words, Skyeshelt’s $\beta > 1$ indicates that the N-REIT is not perfectly correlated with the market; it might tend to swing in the same direction but it would rise or fall probably more than thrice more than the general market.

**Table 2: Beta coefficient and $R^2$ matrix of N-REIT (2008 – 2011)**

<table>
<thead>
<tr>
<th>N-REIT</th>
<th>$\beta$</th>
<th>t-Test</th>
<th>Critical Value @ 0.05</th>
<th>$R^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skye Shelter Fund</td>
<td>3.54</td>
<td>0.5</td>
<td>2.13</td>
<td>0.122</td>
</tr>
</tbody>
</table>

Sources: Authors’ research and computation results, 2013

There are several possible explanations for REITs’ weak correlation with the general market. First of all, Man’s need for land and shelter is constant, regardless of the market or economic season. The tendency for rental housing to be particularly recession-resistant, funding and construction lags typical of the property supply or development industry, REITs’ exposure to a diversified property portfolio of income-generating assets across major geographical markets and property types, and strong rental cash flow have also been cited (Appraisal Institute, 2001; Carricko, 2008; Oteh, 2011). In essence, the current finding aligns with the current thinking in the field and particularly reinforces the high portfolio-risk diversification value of N-REIT’s as a veritable investment vehicle in a developing economy (BGL, 2011; Sanya, 2011; Baum, 2013).

### V. Conclusion

The paper provides further evidence of the portfolio-risk diversification nature of REITs in the Nigerian context in consistency with the growing body of literature in the field. This study has shown that N-REITs remain largely noncyclical, low-risk, good risk-diversifiers that investors can leverage for building stable, optimal portfolios, particularly during periods of heightened macroeconomic uncertainties of the kind witnessed over the recent years across the world. This has positive implications for corporate finance practice, in terms of helping to establish REIT as a valuable asset class for sustainable national development through optimal portfolio performance, stability, and growth.

Two caveats need to be noted regarding the present contribution. Firstly, the sample size for this study is small, but this is because of the relative infancy of the N-REITs. Consequently, caution must be applied, as the findings may not be transferable to some other variants of REITs, such as privately held REITs. Secondly, the CAPM and the simple $R$-squared tool used in this paper on their own do not tell us the entire story; further research may be necessary to incorporate other approaches such as Fama-French three-factor model, and to use daily or monthly returns rather than annual dataset, so as to complement the evidence database provided in this paper.

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